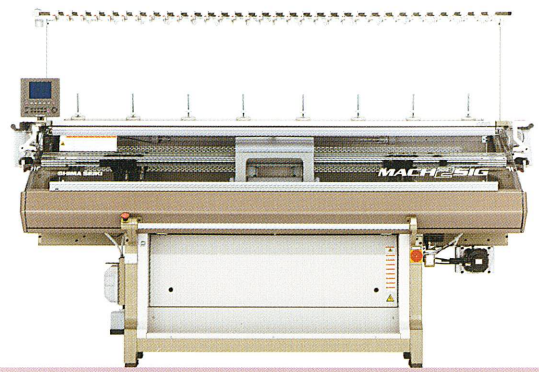


*your choice*  
**SHIMA SEIKI**

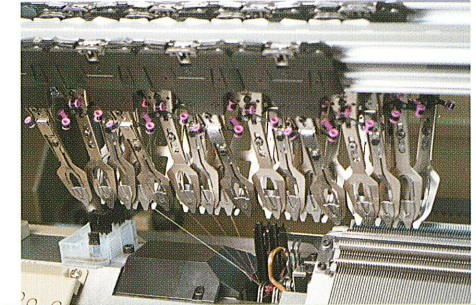
# **MACH2SIG**

Computerized Flat Knitting Machine



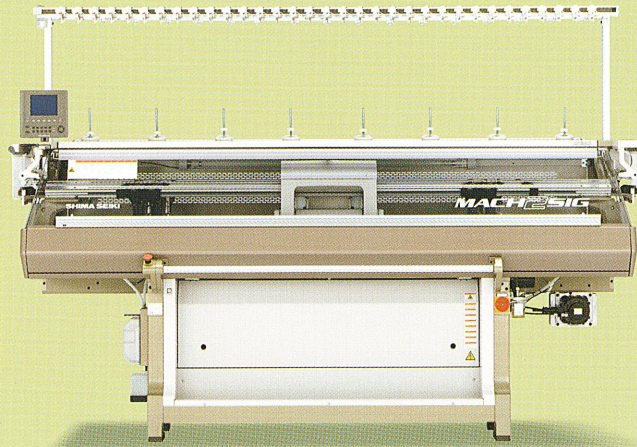
# THE NEW BENCHMARK IN INTARSIA KNITTING

SHIMA SEIKI introduces a whole new benchmark in intarsia knit production with the MACH2<sup>®</sup>SIG<sup>®</sup> machine. As the name suggests, MACH2<sup>®</sup>SIG<sup>®</sup> offers unprecedented speed and efficiency. Maximum knitting speed is increased to 1.4 meters per second. The new R2CARRIAGE<sup>®</sup> System achieves quicker carriage returns after each course. Intarsia knitting is dramatically improved through the use of up to 40 intarsia carriers. In addition, as part of the newest generation of SHIMA SEIKI knitting machines, MACH2<sup>®</sup>SIG<sup>®</sup> carries over all the technological achievements for which SHIMA SEIKI is made famous: DSCS<sup>®</sup> Digital Stitch Control System; Full-Time Spring-Loaded Sinker System; Stitch Presser; Yarn Gripper and Cutter; Takedown Comb; and more. Finally, MACH2<sup>®</sup>SIG<sup>®</sup> offers a blend of Made-in-Japan quality and reliability, productivity, user-friendliness and cost-performance that fulfills the high expectations already held by the global fashion industry.



## Intarsia Carriers

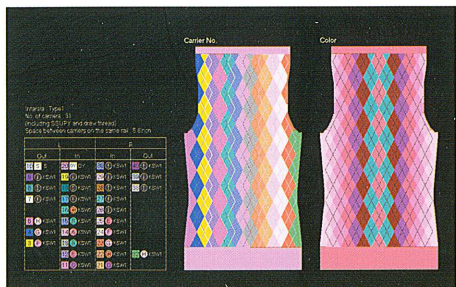
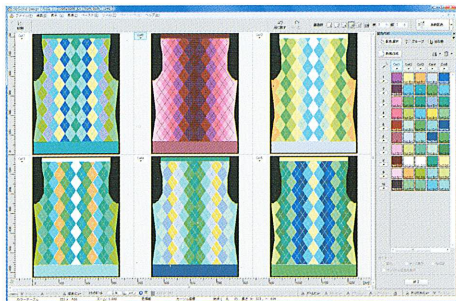
MACH2<sup>®</sup>SIG<sup>®</sup> machines feature capacity for up to 40 intarsia carriers. The new intarsia carriers are more compact, fitting more carriers and thus allowing more color changes within a given knitting width. The improved intarsia system is also much quieter, averaging two-thirds (2/3) less noise than our previous intarsia system.



## MACH2<sup>®</sup>SIG<sup>®</sup>

Computerized Flat Knitting Machine

- Knitting Width
- KNITRAN<sup>®</sup> System
- R2CARRIAGE<sup>®</sup> System
- Tough Needle Bed
- Gauge Range
- WideGauge<sup>®</sup> Knitting
- Gaugeless Knitting
- Solenoid Needle Selection
- Stitch Presser
- Full-Time Sinker
- Yarn Gripper and Cutter
- DSCS<sup>®</sup>
- option  
i-DSCS+DTC<sup>®</sup>

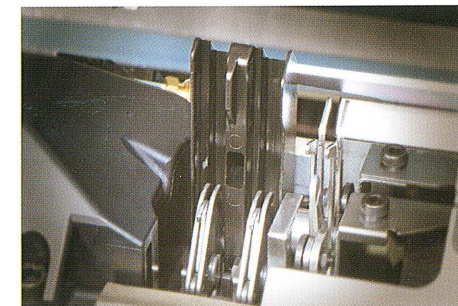
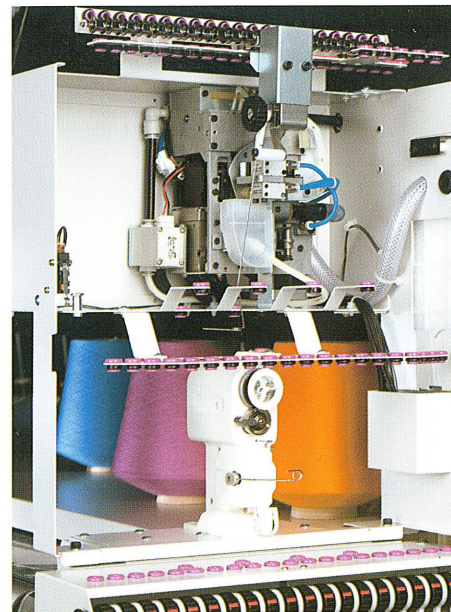


## R2CARRIAGE<sup>®</sup>

RAPID RESPONSE CARRIAGE SYSTEM

### Rapid Response R2CARRIAGE<sup>®</sup> System

The R2CARRIAGE<sup>®</sup> (R2=Rapid Response) System features an advanced carriage mechanism combined with improved software programming that achieves quicker carriage returns after each course.

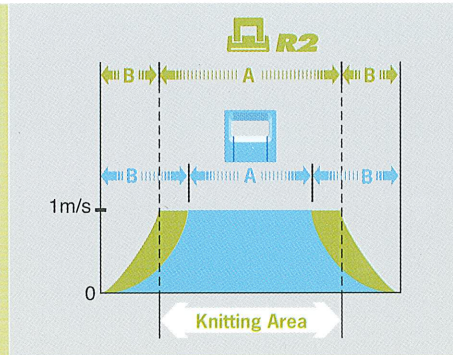


### Lint remover

MACH2<sup>®</sup>SIG<sup>®</sup> features a yarn gripper equipped with a new lint remover for reduced maintenance.

### The New Intarsia Standard

New Automatic Yarn Carrier Setting software on our SDS<sup>®</sup>-ONE APEX apparel design workstation reduces production leadtimes dramatically, for up to 40 yarn carriers. The new intarsia carriers are more efficient, capable of producing finer, sophisticated intarsia designs, such as reducing the minimum repeat width of argyle patterns from 6- to 3-inches. Furthermore with the optional i-DSCS+DTC<sup>®</sup> Digital Stitch Control System "with Intelligence" and Dynamic Tension Control, as well as the Air Splicer, variable electronic control of yarn tension provides consistent quality among different machines, production batches and repeat orders, and contributes to high-quality production of multi-colored intarsia products.



For a given knitting width, a larger and heavier carriage requires more space (B) at each end of the machine to decelerate, return and accelerate back up to speed, so the actual portion where the carriage runs at full speed (A) becomes very limited. With a compact, lightweight carriage, less space is required for the carriage to make returns, allowing more area for the carriage to run at full speed. This allows faster knitting per course, resulting in higher productivity.







### Air Splicer and i-DSCS+DTC (optional)

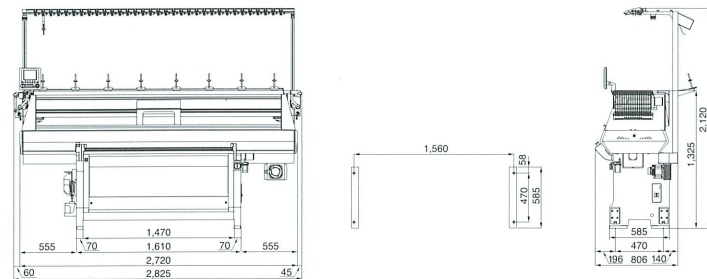
Unlike conventional knoter systems which mechanically tie together yarn ends, the Air Splicer cuts then twists together yarns with a burst of pressurized air with split-second accuracy. Working in precise coordination with our i-DSCS+DTC<sup>®</sup> Digital Stitch Control System "with Intelligence" and Dynamic Tension Control, the Air Splicer is able to time each splice so that perfect color changes can occur exactly as programmed. With the Air Splicer, high-quality multi-color intarsia knitwear can be produced easily and with beautiful results.



### A User-Friendlier Knitting Machine

Space efficiency is improved during installation by integrating the fabric collection tray within the machine frame. The network connector is repositioned on the side of the controller for easier access when performing production data management with Shima Network Solutions. The USB interface is also positioned directly below the control monitor for improved access in data exchange.

-   
 option  
 Air Splicer
-   
 Setup Device
-   
 Takedown Rollers
-   
 Dust Cleaner
-   
 Schedule Knit
-   
 Back-Lit LCD Panel
-   
 Network Interface
-   
 M384  
 Pattern Memory
-   
 USB  
 Memory Interface
-   
 Back-up Power

**Average Weight**MACH2<sup>®</sup>SIG<sup>®</sup> 910kg (2,002lbs.)

Actual weight is dependent upon gauge and optional equipment.

All dimensions are in millimeters.

**SPECIFICATIONS**

Type	MSIG123		
Variation	SV	SC	FC
Gauge	12 · 14 · 16	12 · 14 · 16 · 18	16
Knitting width	Variable stroke. Max 48" (122cm)		
WideGauge <sup>®</sup>	Wide range of gauge knit on a single machine.		
Knitting speed	Max 1.4m / sec. Knitting speed varies according to gauge and knitting condition. Variably adjustable speed levels. 10 additional programmable speeds.		
Stitch density	120 levels, electronically controlled.		
Racking	Motor-driven racking mechanism. Max 2-inch racking. 1/2 and 1/4 pitch also available from any position.		
Knitting system	Triple KNITRAN <sup>®</sup> system. Single R2CARRIAGE <sup>®</sup> system.		
Transfer	Simultaneous transfer, front or back, independent of carriage direction. Split stitch possible without exchanging yarn carriers.		
Sinker system	Spring-type moveable full-sinker system.		Fixed sinker system.
Stitch presser	Special motor-driven system allows individual adjustment for on/off in knit and transfer.		
Needle hook conversion	Conversion between LL-size and MM-size possible without exchanging cams. ○ (12 and 14 gauge only)		
Needle selection	Full jacquard selection via special solenoid actuators.		
Setup device	Takedown comb with special setup needles.		
Takedown device	Main/sub rollers. Changeable 99 levels, automatically adjustable on each level. Automatic opening and closing.		
Yarn cutter	Single-unit system includes 1 yarn cutter and 2 yarn grippers. Both sides standard. Lint remover.		
Air splicer	Instant color changes using pressurized air. 1 unit on each side. 8 colors per unit. Optional <sup>1</sup> .		
DSCS <sup>®</sup>	Consistent loop length by digital control method. Left side standard. 8 encoders. Left side standard.		
i-DSCS+DTC <sup>®</sup>	DSCS <sup>®</sup> with Intelligence+Dynamic Tension Control. Actively controls yarn feed in both feed and retrieval directions. Electronic control of yarn-feed tension permits high-speed knitting. 1 unit on each side. Optional <sup>1</sup> .		
Yarn feed roller	20 positions on each side. Left side double roller standard (SC18 gauge only).		
Yarn stopper device	8 positions on left side (SC18 gauge only).		
Side tensions	20 on each side		
Yarn carriers	33 intarsia carriers. (40 max.) <sup>2</sup> .		
Top tensions	33 tension devices <sup>3</sup> .		
Stop motion	One-touch easy threading. Large knots cause machine stop. Small knots cause 0-9 courses at specified knot detection speed, then automatically resume at set speed.		
Drive system	Yarn break, large knot, wraparound check, shock detection, piece count, over-torque, program error, etc.		
Cleaner	Belt drive. AC servo motor. No lubrication necessary.		
Safety devices	Special blower operated cleaner.		
Operation lamp	Full safety cover for noise-suppression and dust-proofing with stop motion sensor and interlock mechanism. Emergency stop switch. Emergency power off device. Ultra-low speed "crawl" setting. CE Mark. Indicator lamps (see below).		

**CONTROLLER**

Data input	USB memory interface. Ethernet 10/100 BASE-T network interface.
Pattern memory	25,165,824 bits (1,024 wales × 8,192 addresses)
Control unit	Built-in controller. Stored program for flat knitting machine.
Control display	Monochrome LCD panel. Editing possible via display panel operation. Available in English, French, Italian, Spanish, Portuguese, German, Turkish, Arabic, Russian, Chinese, Korean and Japanese.
Back-up power	Power supply for resuming knitting after power failure
Power	Single phase AC220V ±10% 2.2kVA

**OPTIONS :** (1) Air splicer and i-DSCS+DTC<sup>®</sup> are available only as a set (12G, 14G and 16G only). (2) Additional intarsia carriers. (3) Additional tension devices.

**SAFETY NOTICE**

In order to ensure safe operation of the equipment, please review all operation manuals carefully before use.

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Featured cover sample: i1057S009

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